

**PERSEREC**



Technical Report 01-3  
May 2001

**Estimated Impact of the Proposed  
Automated Continuing Evaluation System (ACES)  
on Personnel Security Effectiveness:  
A Preliminary Feasibility Assessment**

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Howard Timm  
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Released by  
James A. Riedel  
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| REPORT DOCUMENTATION PAGE  |             |                                    |                               | Form Approved<br>OMB No. 0704-0188   |   |
|--|-------------|------------------------------------|-------------------------------|--|---|
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| 1. REPORT DATE (DD-MM-YYYY)<br><b>May 2001</b>   |             | 2. REPORT TYPE<br><b>Technical</b> |                               | 3. DATES COVERED (From - To)<br><b>3/8/00 - 9/26/00</b>                          |   |
| 4. TITLE AND SUBTITLE<br><b>ESTIMATED IMPACT OF THE PROPOSED AUTOMATED CONTINUING EVALUATION SYSTEM (ACES) ON PERSONNEL SECURITY EFFECTIVENESS: A PRELIMINARY FEASIBILITY ASSESSMENT<sup>1</sup></b>   |             |                                    |                               | 5a. CONTRACT NUMBER  |   |
|  |             |                                    |                               | 5b. GRANT NUMBER   |   |
|  |             |                                    |                               | 5c. PROGRAM ELEMENT NUMBER   |   |
| 6. AUTHOR(S)<br><br><b>Howard Timm</b>   |             |                                    |                               | 5d. PROJECT NUMBER   |   |
|  |             |                                    |                               | 5e. TASK NUMBER  |   |
|  |             |                                    |                               | 5f. WORK UNIT NUMBER   |   |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br><br><b>Defense Personnel Security Research Center<br/>99 Pacific Street, Bldg. 455-E<br/>Monterey, CA 93940-2497</b>   |             |                                    |                               | 8. PERFORMING ORGANIZATION<br>REPORT NUMBER<br><br><b>Technical Report-01-03</b> |   |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)<br><b>Defense Personnel Security Research Center<br/>99 Pacific Street, Bldg. 455-E<br/>Monterey, CA 93940-2497</b>  |             |                                    |                               | 10. SPONSORING/MONITOR'S<br>ACRONYM(S)   |   |
|  |             |                                    |                               | 11. SPONSORING/MONITOR'S<br>REPORT NUMBER(S)                                     |   |
| 12. DISTRIBUTION/AVAILABILITY STATEMENT  |             |                                    |                               |  |   |
| 13. SUPPLEMENTARY NOTES  |             |                                    |                               |  |   |
| 14. ABSTRACT<br>A retrospective design was employed in this study to estimate the number of full-scale reinvestigations that would have been triggered under the proposed Automated Continuing Evaluation System (ACES) in 11,065 Office of Personnel Management periodic reinvestigation cases for people holding high level Federal security clearances. An assessment was also made of the number of serious issue cases identified under the present system that would have been missed by ACES. Under the present system, full-scale reinvestigations are required to be conducted on all personnel holding high-level clearances who have not been investigated for five years. Under ACES, computerized security-related information (e.g., criminal history, foreign travel, and credit database files) would be regularly checked. Full-scale reinvestigations in individual cases could be triggered any time or may never be initiated based upon the results of the electronic checks, as well as consideration of other risk-management factors. The results indicate that ACES is likely to detect more serious issue cases than the present system, because they are currently being missed whenever people having them quit before their periodic reinvestigations are initiated. It appears the ACES approach would also detect serious issue cases sooner and at less cost than the current periodic reinvestigation approach. |             |                                    |                               |  |   |
| 15. SUBJECT TERMS<br><b>Personnel security, background investigation, periodic reinvestigation, security, national security, security risk, position of trust, security clearance, classified information.</b>   |             |                                    |                               |  |   |
| 16. SECURITY CLASSIFICATION OF:<br><b>Not Classified</b>   |             |                                    | 17. LIMITATION<br>OF ABSTRACT | 18. NUMBER<br>OF PAGES   | 19a. NAME OF REPOSIBLE PERSON<br><b>James A. Riedel, Director</b> |
| a. REPORT  | b. ABSTRACT | c. THIS PAGE                       |                               |  | 19b. TELEPHONE NUMBER (Include area code)<br><b>831-657-3000</b>  |

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## Preface

The Defense Personnel Security Research Center (PERSEREC) is conducting research to test the feasibility of a system for operating aperiodic personnel security reinvestigations in lieu of the current system of reinvestigation every five years. The system is called Automated Continuing Evaluation (ACES). This report is the first in a series. Additional research is now underway to further assess the feasibility of ACES and other personnel security continuing evaluation procedures that are based upon similar strategies.

The Office of Personnel Management (OPM) data on which this study is based provides solid support for PERSEREC and others to further test and debate the merits of modifying existing personnel security policies to introduce a system of aperiodic reinvestigations and automated continuing evaluations. These evaluations involved automated checks of security-relevant databases, such as criminal history, credit, foreign travel, and large-currency transactions. This approach would reduce security risk by detecting more cases involving issues of serious security concern and by detecting those cases earlier. Furthermore, it would substantially reduce demands on investigative resources. This would be accomplished by applying more investigative resources to the relatively small number of cases where they are needed the most and fewer resources to cases where they are needed the least. Using this approach, full-scale reinvestigations would be triggered based on factors such as the person's level of access, the time elapsed since the last investigation, whether issues were detected in the last investigation, and the seriousness and number of new issues detected by automated checks of security-relevant databases. Some of the investigative resources that are freed up could be applied to reduce the length of time it takes to complete initial personnel security investigations.

While the report's findings should be considered preliminary, they do support what could be a significant change to the Federal personnel security system: the adoption of an a-periodic reinvestigation cycle coupled with more frequent automated checks of security-relevant databases.

James A. Riedel  
Director



## **Acknowledgements**

Kathy Dillaman, Director of the Federal Investigations Systems, Office of Personnel Management (OPM), originally suggested using OPM data and a retrospective design for assessing the impact of different continuing evaluation strategies under consideration. Without the assistance and guidance from the following personnel at OPM, this project could not have been completed: Kathy Dillaman, Chris DeMatteis, Sandy McCall, Kim Truckley, Keith Ruby, and Bob Tomcheck.



## **Executive Summary**

A retrospective design was employed in this study to estimate the number of full-scale reinvestigations that would have been triggered under the proposed Automated Continuing Evaluation System (ACES) in 11,065 Office of Personnel Management (OPM) periodic reinvestigation cases for people holding high-level Federal security clearances. An assessment was also made of the number of serious issue cases identified under the present system that would have been missed by ACES. Under the present system, full-scale reinvestigations are required to be conducted on all personnel holding high-level clearances who have not been investigated for five years. Under ACES, computerized security-related information (e.g., criminal history, foreign travel, and credit database files) would be regularly checked. Full-scale reinvestigations in individual cases could be triggered at any time or might never be initiated based upon the results of the electronic checks, and consideration of other risk-management factors. Findings indicate that a majority of the security clearance holders in the OPM reinvestigation sample would not have needed full-scale reinvestigations based upon the ACES criteria. In addition, no serious issue cases and very few moderately serious issue cases detected by the present system would have been missed had the recommended ACES procedures been in effect for those cases. ACES is likely to detect some serious issue cases currently being missed because the personnel quit before their periodic reinvestigations were initiated. Consequently, ACES is likely to detect more serious issue cases than the present system. It would also detect those serious issue cases sooner and at less cost than the current periodic reinvestigation approach. These findings should be considered preliminary in nature due to methodological limitations inherent in this assessment. They are, however, supportive of the continued development of ACES and other personnel security continuing evaluation procedures that are based upon similar strategies.



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## **Introduction**

### **Background**

Single Scope Background Investigation (SSBI) – Periodic Reinvestigations are required every five years for people holding the highest-level Federal security clearances and accesses (e.g., TOP SECRET, Q, SCI).

In the last decade, two national commissions have criticized the security clearance procedures. (Commission on Protecting and Reducing Government Secrecy, 1997; Joint Security Commission; 1994). The Joint Security Commission (1994) recommended that current reinvestigation policies be refined to increase efficiency and cost effectiveness, noting that an aperiodic reinvestigation interval would offer a greater deterrent to adverse security-related behavior and provide agencies with more flexibility to focus their resources on priority investigations (p. 46).

The Commission on Protecting and Reducing Government Secrecy (1997) stated:

Greater attention needs to be directed toward making continuing evaluation programs more effective. For example, using existing public and private data bases – with the express advance permission of the individual under review – to periodically scan for criminal history, as well as credit, travel, and business history, normally would provide more accurate information at less cost than standard field reinvestigations.

Personnel security professionals could monitor the behavior of cleared personnel on a continuing basis in a more effective, cost-efficient, and nonintrusive manner. Given the evidence that there is little likelihood of catching spies through the current standard investigative or reinvestigative process, better continuing assessment programs could enhance the probability of deterring or identifying espionage activities. Most of the information needed is already available in existing databases; private industry experiences suggest that efforts to utilize automation to access such data can be very cost-effective as well as productive. Nevertheless, because some automated tools can be expensive, a cost-benefit assessment should be completed prior to utilizing them.

Resources should be focused on those individuals in the most sensitive positions or where there is some evidence of suspect behavior; in an era of diminishing resources and frequent budget cuts, more effective continuing assessment can be accomplished only by concentrating on the areas of greatest vulnerability. In addition, those holding what are identified as the most sensitive positions could be subjected to more frequent, “in house” reviews similar to the personnel reliability programs used by the Defense and Energy Departments, as described above. These measures provide a cost-effective way to monitor and assess employees with greater regularity and frequency, but without necessarily having to direct additional resources toward the traditional field investigation (pp. 86-87).

## **Automated Continuing Evaluation System (ACES)**

An Automated Continuing Evaluation System (ACES) prototype, which is presently under development in the Department of Defense, embodies the aforementioned Commission recommendations. Instead of evaluating on a five-year cycle whether cleared personnel have been engaging in behaviors of serious security concern, ACES would check relevant databases far more frequently using a rationally based aperiodic reinvestigation strategy. Full-scale reinvestigations would be triggered based on such factors as evidence of behaviors of security concern, individuals' access to particularly sensitive information or materials, length of time since the last full-scale investigation, and on a random basis. A more detailed explanation of the proposed ACES criteria used for determining when full-scale aperiodic reinvestigations would be triggered is presented in Appendix A.

The Defense Personnel Security Research Center (PERSEREC) recently completed a database matching pilot study that assessed the feasibility and value of acquiring computerized data from 15 different governmental and private vendor databases for use in personnel security investigations (Chandler, Timm, Massey, & Zimmerman, 2000). Statistical matches and "live" record checks on actual Defense Security Service cases helped identify which of those databases provide the most useful information. Other studies have also addressed the productivity of certain sources that will be included under ACES, such as credit reports and Treasury Department large currency transaction report data (Carney, 1996; Defense Manpower Data Center, 1987a, 1987b, 1988, 1989).

### **Purpose**

The purpose of the present study is to assess two measures that may affect the viability of ACES, the number of serious issue cases detected and the number of full-scale reinvestigations triggered. The number of cases with serious issues identified by the most comprehensive Office of Personnel management (OPM) periodic reinvestigations (PRs) is compared to the estimated number that would have been identified had the ACES database checks and case expansion criteria been applied to those same cases. If ACES is unable to identify most of the serious cases, adopting the new procedure in lieu of the present approach could pose a serious threat to national security. If ACES triggers more full-scale reinvestigations than are conducted under the present system, the program may not be cost effective.

### **Method**

The method section is divided into two phases. Before the main research questions could be addressed, it was necessary to establish an adjudication-based categorization of the seriousness of cases. The first phase describes how those categories were created. The second phase describes the approach and procedures used for addressing the primary research questions.

The number of full-scale reinvestigations that would have been triggered by ACES in those cases is compared to the total number of PR cases in the sample.

### **Phase 1 - Establishing Adjudication-Based Designated Seriousness Categories for Cases**

OPM uses the following seriousness code continuum to rate cases: G - no issues, A - minor issues, B - moderate issues, C - substantial issues, D - major issues. It also employs other codes, such as: E - other, J - major issues to which the subject made admissions, W - issues that may be relevant depending on the mission of the organization, and R - no actionable issues.

#### **Subjects**

The overall OPM case seriousness code and the adjudication action taken by the agency that requested the investigation were obtained for 49,260 initial background investigations (OPM Investigation Types 20-39) and 29,007 periodic reinvestigations (OPM Investigation Types 11-13 & 18). No personal identifiers were provided. Cases used for this analysis were closed by OPM from 10/01/95 to 9/30/98. Adjudication action taken by the agency requesting the investigation was available in PIPS for 82.3% of the initial background investigation, and 49.6% of the periodic reinvestigation cases were closed during that period.

#### **Procedure**

The adjudicative outcomes for the cases included in this phase of the study were cross tabulated by the above OPM seriousness codes in order to reduce ambiguity and apparent overlap in OPM seriousness categorizations. Based upon the percentages of cases that received favorable adjudications within each category of the OPM seriousness codes, the case seriousness categories designated for analytical purposes were as follows: Codes G and R were designated *None*; Codes E, W, and A were designated *Very Minor*; Code B was designated *Minor*; Code C was designated *Moderate*; and Codes J and D were designated *Major*. To distinguish these codes from OPM seriousness codes, they will be identified as "Designated Seriousness Categories" throughout the remainder of this document.

Tables 1 and 2 show the percentages of cases favorably and negatively adjudicated as well as the percentages of subjects who resigned prior to the adjudication decision. Table 1 reports those values for the OPM seriousness codes within each of the new, adjudication-based, Designated Serious Categories for Initial Full-Scope Background Investigations. Table 2 presents that information for Periodic Reinvestigations.

**Table 1**  
**Designated Seriousness Categories for OPM Seriousness Codes Based Upon Agency**  
**Adjudication Action on Initial Full-Scope Background Investigations<sup>a</sup>**

| <i>OPM<br/>Seriousness<br/>Code<br/>n</i> | <i>Favorable<br/>Adjudication<br/>(OPM Codes 1,2,3)<br/>%</i> | <i>Subject Resigned<br/>(OPM Code 4)<br/>%</i> | <i>Negative<br/>Adjudication<br/>(OPM Codes 5,6,7,8)<br/>%</i> | <i>Designated<br/>Seriousness<br/>Category</i> |
|---|---|--|--|--|
| G 9,612                                   | 98.6  | 1.2  | 0.0  | None   |
| R 12,336                                  | 98.0  | 1.7  | 0.1  | None   |
| E 4,026                                   | 95.3  | 3.9  | 0.1  | Very Minor                                     |
| A 3,739                                   | 94.5  | 4.7  | 0.2  | Very Minor                                     |
| W 12,693                                  | 94.5  | 4.2  | 0.3  | Very Minor                                     |
| B 3,191                                   | 88.5  | 9.2  | 0.7  | Minor  |
| C 2,084                                   | 80.2  | 13.7   | 2.0  | Moderate                                       |
| D 1,557                                   | 54.2  | 25.0   | 9.8  | Major  |
| J 22                                      | 45.5  | 22.7   | 9.1  | Major  |

*Note.* N=49,260.

<sup>a</sup> Only cases where adjudication action was reported to OPM were included. Percentages across rows do not total 100% because some other type of action was taken by the agency in a small number of cases.

**Table 2**  
**Designated Seriousness Categories for OPM Seriousness Codes based upon Agency**  
**Adjudication Action on Periodic Reinvestigation<sup>a</sup>**

| <i>OPM<br/>Seriousness<br/>Code<br/>n</i> | <i>Favorable<br/>Adjudication<br/>(OPM Codes 1,2,3)<br/>%</i> | <i>Subject Resigned<br/>(OPM Code 4)<br/>%</i> | <i>Negative<br/>Adjudication<br/>(OPM Codes 5,6,7,8)<br/>%</i> | <i>Designated<br/>Seriousness<br/>Category</i> |
|---|---|--|--|--|
| G 8,108                                   | 99.6  | 0.2  | 0.0  | None   |
| R 9,808                                   | 99.6  | 0.4  | 0.0  | None   |
| E 1,561                                   | 99.0  | 0.6  | 0.1  | Very Minor                                     |
| A 1,338                                   | 98.8  | 0.7  | 0.0  | Very Minor                                     |
| W 6,312                                   | 98.4  | 1.2  | 0.1  | Very Minor                                     |
| B 1,158                                   | 95.4  | 3.5  | 0.3  | Minor  |
| C 456                                     | 92.1  | 5.7  | 0.4  | Moderate                                       |
| D 266                                     | 85.7  | 11.7   | 0.4  | Major  |

*Note.* N=29,007

<sup>a</sup> Only cases where adjudication action was reported to OPM were included. Percentages across rows do not total 100% because some other type of action was taken by the agency in a small number of cases. No row for "J" level cases appears because only six cases with outcome information were coded as "J" -- four were favorably adjudicated, one resigned, and one fell into the category for "another type of action was taken."

## Phase 2 - Estimating the Impact of ACES

### Subjects

Investigation outcome information was obtained on 11,686 OPM Single-Scope Background Investigation - Periodic Reinvestigation cases (OPM Investigation Type 18)

that were closed with a completed investigation between 10/01/97 and 9/30/99. No personal identifiers were included in the data set provided. Cases issued a "K" seriousness code by OPM were excluded from the analyses. "K" codes are issued when OPM officials do not provide an overall case seriousness rating for administrative reasons. A total of 621 cases in the data set were excluded from the analyses due to a "K" designation instead of a normal seriousness code in either the subject's initial investigation, the reinvestigation, or both. This left 11,065 cases for the primary analyses.

### **Approach**

The adjudication-based Designated Seriousness Categories established in Phase One that applied to completed full-scope SSBI reinvestigations served as benchmarks for assessing the ability of ACES to identify cases with serious issues. That measure was chosen because the full-scope SSBI reinvestigation includes the monitoring measures used by ACES (e.g., completion of a personnel security questionnaire, national agency database, and credit and local agency checks) as well as several other investigative procedures not used by ACES unless a full-scope investigation is triggered (e.g., subject, developed reference, neighbor, and co-worker interviews). It is assumed that one five-year check of the databases monitored at year five by ACES would yield the same total amount of security-related information gleaned from five annual checks covering that same period. For example, if an individual had three arrests posted in a criminal history database during a covered five-year interval, both ACES and SSBI-PR checks should detect all three arrests for that period. ACES, however, has the ability to detect the arrests earlier than the SSBI-PR checks.

Due to the study's retrospective design, the time periods covered by the ACES estimates were fixed at the same interval covered by the subjects' actual OPM periodic reinvestigations. Given that full-scale reinvestigations triggered under ACES would encompass the same number and type of face-to-face interviews as normal SSBI-PRs, ACES full-scope reinvestigations should detect the same issues of security concern as SSBI-PRs that cover the same time period. Therefore, for the period between the subject's last completed full-scope investigation and the subject's most recent PR, the outcome of the SSBI-PR was considered an appropriate quality benchmark for assessing ACES. ACES can meet the SSBI-PR serious issue detection output for the time period covered by a completed PR, but theoretically it should never be able to outperform it within that same interval, because the same sources would have been checked whenever full-scope reinvestigations were triggered.

In addition to assigning an overall case seriousness score in its personnel security cases, OPM requires its contract investigators to designate the type and seriousness of the issues developed from each type of source of information used during investigations. According to officials at OPM, investigators evaluate the information found at each source independently from the information found at other sources. Consequently, it is possible to separate the issues detected by the sources that would have been routinely monitored by ACES from those that would have only been obtained if a full-scale reinvestigation had been triggered. Values used by ACES to determine whether or not a full-scope reinvestigation would have been triggered were calculated by considering the

presence and level of issues of security concern developed from the personnel security questionnaire, national agency checks, credit check, local agency check, and basic employment check. The values were also calculated without consideration of the information obtained during the basic employment check in order to assess the relative utility of including that source of information in ACES.

### **Procedure**

In the data provided by OPM, each category of investigative source used in the investigation was rated as follows: 0—no issues were identified by that source, 1—a relatively minor issue was identified, or 2—either a more serious issue or multiple issues were found. If one or more issues were identified by any of the sources monitored by ACES, and the overall case seriousness code was not rated as G, R, or K, that case was categorized as having identified at least a minor issue under ACES conditions. If the sum of the OPM category scores for the measures monitored by ACES was 2 or higher, and the overall OPM case seriousness code was designated as B, C, J, or D, that case was categorized as having identified at least a moderate issue under ACES conditions. If the sum of the OPM item scores for the measures monitored by ACES was 4 or higher, and the overall case seriousness code was designated as C, J, or D, that case was categorized as having identified a major issue under ACES conditions. Another way C, J, or D level cases were categorized as identifying major issues under ACES conditions was if the sum of the OPM item scores for the measures monitored by ACES was 3, and one of the OPM item ratings was 2.

As described in the preceding paragraph, when determining issue seriousness according to ACES, the OPM overall case seriousness codes were used as upper-range limits for the level of issues identified by ACES, but not as lower-range limits. The rationale for using the overall OPM seriousness score as an upper-range limit is that the level of information of security concern that can be collected from a subset of the investigative sources in theory should never exceed the level that would have been collected from the entire set. The overall OPM seriousness score, however, was not used as a lower limit because it is clearly possible to collect less information of security concern from a subset of the investigative sources than would have been collected from the entire set. For example, ACES might find no issues of security concern in “major issue” OPM cases because the sources that provided that information would not have been checked by ACES (e.g., exclusively from the neighborhood interviews). However, ACES should never be able to identify “major issues” in cases covering the same period of investigation in which a full-scope SSBI PR found no issues.

### **Criteria used for identifying cases that would have been selected by ACES to receive a full-scope reinvestigation**

A primary function of ACES is to trigger full-scale aperiodic reinvestigations. In this study, only five of the seven criteria listed in Appendix A were used to identify cases that would have been selected by ACES to receive a full-scope reinvestigation. Points that would have been issued at random or to people who have access to especially sensitive information or materials were not taken into consideration in the analyses. It is

not known which of the people who completed the OPM reinvestigations had especially sensitive accesses. The impact of random point assignment on both resources and serious case detection will vary depending upon the level of chance selected by the end-user. The effects due to random point assignment can be easily estimated by the reader for any level of chance considered. The five criteria that were included in the estimates are presented below in the form of questions. Each time the response to a question is "yes" in a given case another point was awarded. Consequently, the range of points awarded in the analyses was from 0 to 5. Cases receiving three or more points would have been slated to receive full-scope reinvestigations under ACES. (See also Appendix A.)

- Has it been five years or more since that person's last full-scale investigation? Since all of the investigations in the OPM sample were PRs, it is believed they all would have met this criterion. Therefore, one point was issued in every such case.
- Was an issue of security concern identified by that person's initial background investigation? If an OPM overall case seriousness code of E, A, W, B, C, D, or J was issued in the person's initial background investigation, one point was issued.
- Was an issue or set of issues of at least minor security concern detected by the ACES sources? If so, one point was issued.
- Was an issue or set of issues of at least moderate security concern detected by the ACES sources? If yes, one point was issued in addition to the point issued for having at least minor issues detected.
- Was an issue or set of issues of major security concern detected by the ACES sources? If yes, one point was issued in addition to the two points issued for having at least minor and moderate issues detected.

## Results

Table 3 presents the total number of subjects within each Designated Seriousness Category who resigned before completion of their investigations for either initial background investigations or periodic reinvestigations. The percentages of people whose initial background investigations and periodic reinvestigations resulted in negative agency adjudication actions by Designated Seriousness Category are presented in Table 4.

Table 3 also depicts two easily discernable relationships: 1) as the level of seriousness of issues detected increased, resignation rates rose and 2) the resignation rates were considerably higher among people undergoing their initial investigation than among people undergoing their periodic reinvestigation. The first relationship suggests that if people thought there was a high likelihood that issues of major security concern would surface during their next periodic reinvestigation, it is reasonable to believe they may be more inclined to quit before that reinvestigation was initiated. Given that ACES would monitor security-relevant databases between full-scale personnel security investigations, it would undoubtedly identify some of those cases that now escape detection due to that limitation. While it is comforting to deduce that some of the people engaging in acts of serious security concern probably quit their positions to escape identification, under the present approach there is a five-year window of vulnerability between investigations, during which time a person in a position of trust can do an enormous amount of damage.

Not surprisingly, the same relationships previously noted for resignations prior to adjudication were found for negative adjudication actions taken by agencies (see Table 4). They were 1) as the level of seriousness of the issues detected increased, negative adjudication rates rose and 2) the negative adjudication rates were considerably higher among people undergoing initial investigations than among people undergoing periodic reinvestigations. What was surprising was how low the negative adjudication rate was for reinvestigations involving major issues. Among the factors that probably contributed to that low rate were 1) people opting to resign in lieu of receiving a negative adjudication, 2) agencies' reluctance to lose trained, functioning employees, and 3) a desire to treat incumbents as humanely as possible, including helping them work through personal problems whenever possible. Given the low negative adjudication rates for PRs, it is clear that much of the value derived from reinvestigations is in deterring people from engaging in negative behaviors and as a means for getting them into treatment when appropriate.

**Table 3**  
**Comparison of the Percentage of People Who Resigned Prior to Adjudication**  
**for Either Initial Background Investigations or Periodic**  
**Reinvestigations by Designated Seriousness Category**

| <i>Designated Seriousness Category</i> | <i>Initial Background Investigations</i> |          | <i>Periodic Reinvestigations</i> |          |
|--|--|----------|----------------------------------|----------|
|  | <i>n</i>                                 | <i>%</i> | <i>n</i>                         | <i>%</i> |
| None                                   | 325/21,948                               | 1.5      | 57/17,916                        | 0.3      |
| Very Minor                             | 868/20,458                               | 4.2      | 93/9,211                         | 1.0      |
| Minor                                  | 294/3,191                                | 9.2      | 40/1,158                         | 3.5      |
| Moderate                               | 285/2,084                                | 13.7     | 26/456                           | 5.7      |
| Major                                  | 394/1,579                                | 25.0     | 31/266                           | 11.7     |
| Overall                                | 2,166/49,260                             | 4.4      | 247/29,007                       | 0.9      |

**Table 4**  
**Comparison of the Percentage of People Whose Initial Background**  
**Investigations and Periodic Reinvestigations Resulted in Negative**  
**Adjudication Action by Designated Seriousness Category**

| <i>Designated Seriousness Category</i> | <i>Initial Background Investigations</i> |          | <i>Periodic Reinvestigations</i> |          |
|--|--|----------|----------------------------------|----------|
|  | <i>n</i>                                 | <i>%</i> | <i>n</i>                         | <i>%</i> |
| None                                   | 11/21,948                                | 0.1      | 1/17,916                         | 0.0      |
| Very Minor                             | 50/2,0458                                | 0.2      | 10/9,211                         | 0.1      |
| Minor                                  | 23/3,191                                 | 0.7      | 3/1158                           | 0.3      |
| Moderate                               | 41/2,084                                 | 2.0      | 2/456                            | 0.4      |
| Major                                  | 154/1,579                                | 9.8      | 1/266                            | 0.4      |
| Overall                                | 279/49,260                               | 0.6      | 17/29,007                        | 0.1      |

A comparison of the percentages of people in each Designated Seriousness Category is presented in Table 5 for the initial background investigation and periodic reinvestigation cases addressed in Tables 1-4, as well as for the FY 98 and 99 SSBI PR subset of those cases used to estimate the impact of ACES.

Both lower-issue case rates and lower-issue seriousness levels for incumbents than for people undergoing initial background investigations are documented in Table 5. Deterrence, prior screening, and maturity probably all contributed to those effects.

**Table 5**  
**Comparison of the Percentage of People in Each Designated Seriousness Category for FY97, 98, and 99 Initial Background Investigations and Periodic Reinvestigations and for FY98 and 99 SSBI Periodic Reinvestigations**

| <i>Designated Seriousness Category</i> | <i>Initial Background Investigations (FY 97, 98, &amp; 99)</i> |          | <i>Periodic Reinvestigations (FY 97, 98, &amp; 99)</i> |          | <i>SSBI Periodic Reinvestigations (FY 98 &amp; 99)</i> |          |
|--|--|----------|--|----------|--|----------|
|  | <i>n</i>   | <i>%</i> | <i>n</i>   | <i>%</i> | <i>n</i>   | <i>%</i> |
| None                                   | 44.6%  |          | 61.8%  |          | 52.0%  |          |
|  | (21,948/49,260)  |          | (17,916/29,007)  |          | (5,756/11,065)   |          |
| Very Minor                             | 41.7%  |          | 31.8%  |          | 41.7%  |          |
|  | (20,458/49,260)  |          | (9,211/29,007)   |          | (4615/11,065)  |          |
| Minor                                  | 6.5%   |          | 4.0%   |          | 3.4%   |          |
|  | (3,191/49,260)   |          | (1,158/29,007)   |          | (376/11,065)   |          |
| Moderate                               | 4.2%   |          | 1.6%   |          | 1.7%   |          |
|  | (2,084/49,260)   |          | (456/29,007)   |          | (187/11,065)   |          |
| Major                                  | 3.2%   |          | 0.9%   |          | 1.2%   |          |
|  | (1,579/49,260)   |          | (266/29,007)   |          | (131/11,065)   |          |

Two tables are presented that compare the number of points that ACES would have issued for each Designated Seriousness Category. Table 6 includes issues raised by employment interviews in the ACES scores; Table 7 does not include issues raised by that source. In both tables, if the ACES score was 3 or greater, a full-scope reinvestigation would have been triggered. Given that a full-scope reinvestigation initiated under ACES would have included the same investigative components as a full-scope OPM reinvestigation, all of the issues detected by the OPM reinvestigation would have been discovered in cases with ACES scores of 3 or more.

**Table 6**  
**Distribution of OPM Periodic Reinvestigation Cases by ACES Score and Designated Seriousness Category – Employment Issues Included in the ACES Score<sup>a</sup>**

| <i>ACES Score<br/>(Based only on<br/>ACES<br/>Sources)</i> | <i>Designated Seriousness Category Based on All OPM Sources</i> |                   |              |                 |              |
|--|---|-------------------|--------------|-----------------|--------------|
|  | <i>None</i>   | <i>Very Minor</i> | <i>Minor</i> | <i>Moderate</i> | <i>Major</i> |
| 1  | 3568  | 196               | 5            | 2               | 0            |
| 2  | 2188  | 1477              | 7            | 2               | 0            |
| 3  | 0   | 2942              | 82           | 7               | 3            |
| 4  | 0   | 0                 | 282          | 37              | 26           |
| 5  | 0   | 0                 | 0            | 139             | 102          |
| % Selected for Full-Scope PR by ACES                       | 0%  | 63.7%             | 96.8%        | 97.9%           | 100%         |

<sup>a</sup> Cases with an ACES score of 3 or more would have received a full-scope reinvestigation. Consequently, all of the issues detected by the OPM reinvestigation would have been found in the cases that met or exceeded that threshold.

**Table 7**  
**Distribution of OPM Periodic Reinvestigation Cases by ACES Score and Designated Seriousness Category – Employment Issues Not Included in the ACES Score<sup>a</sup>**

| <i>ACES Score<br/>(Based only on<br/>ACES<br/>Sources)</i> | <i>Designated Seriousness Category Based on All OPM Sources</i> |                   |              |                 |              |
|--|---|-------------------|--------------|-----------------|--------------|
|  | <i>None</i>   | <i>Very Minor</i> | <i>Minor</i> | <i>Moderate</i> | <i>Major</i> |
| 1  | 3568  | 285               | 9            | 4               | 2            |
| 2  | 2188  | 1401              | 14           | 4               | 2            |
| 3  | 0   | 2929              | 75           | 6               | 4            |
| 4  | 0   | 0                 | 278          | 35              | 26           |
| 5  | 0   | 0                 | 0            | 138             | 97           |
| % Selected for Full-Scope PR by ACES                       | 0%  | 63.4%             | 93.9%        | 95.7%           | 96.9%        |

<sup>a</sup> Cases with an ACES score of 3 or more would have received a full-scope reinvestigation. Consequently, all of the issues detected by the OPM reinvestigation would have been found in the cases that met or exceeded that threshold.

As depicted in Table 6, when employment sources were included in the ACES score, 100% of the OPM reinvestigation cases involving major issues would have been fully investigated under ACES. Conversely, none of the OPM cases that found no issues of security concern would have received full investigations under ACES. This is important because 52% (5756 out of 11,065) of the OPM SSBI reinvestigation cases found no issues of security concern during the course of the reinvestigation. The percentages of cases that would have received full-scope reinvestigations under ACES rose as the seriousness of the issues detected increased (63.7% for very minor, 96.8% for minor, and 97.9% for moderate issues of security concern).

Overall, 67.3% (7445 out of 11,065) of the OPM reinvestigation cases in Table 6 had ACES scores under 3 even when issues identified through employment sources were included. In other words, approximately two thirds of those OPM cases would not have received full-scope reinvestigations under ACES. The non-expansion rate is slightly larger for the cases presented in Table 7, which did not consider issues identified through employment-related checks (67.6% or 7477 out of 11,065 cases). Once again, the percentage of cases that would have received full-scope reinvestigations under ACES rose as the seriousness of the issues detected increased (63.4% for very minor, 93.9% for minor, 95.7% for moderate, and 96.9% for major issues of security concern).

The value of including an employment-related check as part of the measures routinely monitored by ACES can be seen by comparing Tables 6 and 7. Issues of major security concern found in four cases would have been missed without taking into consideration the information identified during the course of the OPM basic employment check. This is not surprising considering the amount of time employees spend at work and the formal and informal feedback mechanisms for detecting employee misconduct that typically operate in the workplace. In addition to finding out from security managers and/or supervisors whether subjects have engaged in any behaviors of security concern, they could be asked whether the subject still needs a high level clearance and whether the person has access to especially sensitive information. Under ACES, subjects having access to especially sensitive information are more likely to receive full-scope reinvestigations.

## Discussion

This study employed a retrospective design entailing analysis of existing computer-readable records from previously completed OPM periodic reinvestigation cases. Using that approach allowed the analyses to be performed quickly and at virtually no additional cost. However, it also limited the analyses to those that could be performed based exclusively on the cases and data at hand. Cleared personnel who quit their jobs before the PRs included in the analyses were initiated were de facto excluded from the study. This point is illustrated in Figure 1.

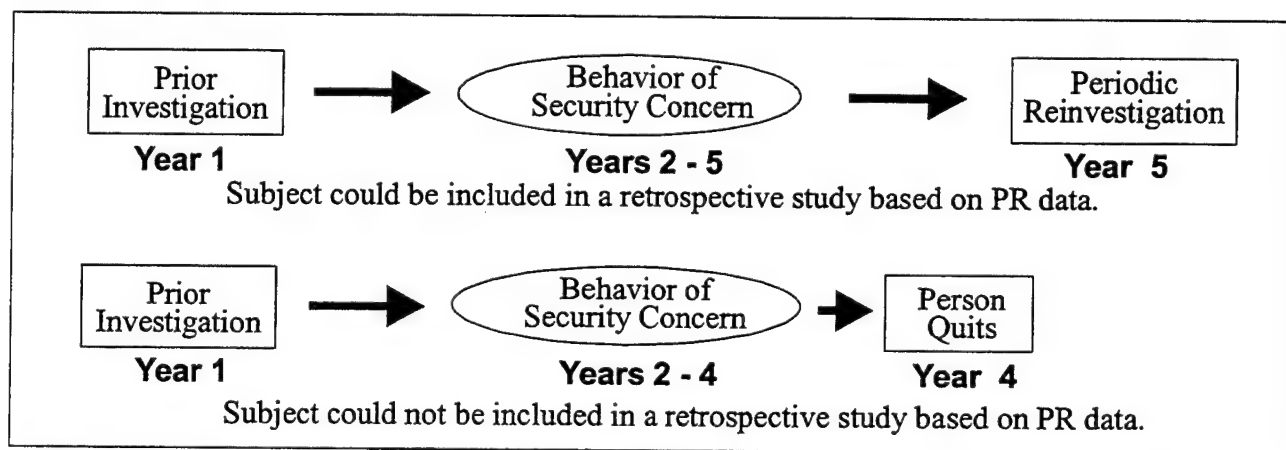


Figure 1. Behavior of Security Concern

The primary analyses were based exclusively on closed, complete periodic reinvestigation cases. Undoubtedly in some of the reinvestigation cases initiated, significant issues of security concern were found and called to the subjects' attention, which probably occasionally resulted in their resigning before their reinvestigations were completed. Those cases were also de facto excluded from the analyses. The obvious problem associated with including prematurely closed cases is that not all of the investigation elements were completed. In certain prematurely terminated cases not all of the ACES database checks would have been finished. In those cases, it is impossible to determine from the data at hand whether additional issues of security concern would have been discovered had the remaining ACES checks been conducted. Similarly, it is impossible to discern from the records at hand whether cases, which appeared "clean" when terminated, would have later turned into "issue cases" had the remaining sources been checked. Given those limitations and the lower drop-out levels found for PRs than for initial investigations, no attempt was made to determine whether the ACES protocol would have been more or less effective in dealing with prematurely terminated cases than it was with the completed cases.

Another limitation stemming from the retrospective design is that the interval between investigations was fixed at the same period reflected in the OPM period reinvestigations. Although this interval is ideal for predicting the impact of applying the ACES protocol to cases currently due for a periodic reinvestigation, it does not permit identifying how ACES would have performed inside that five-year interval. For example, it is not known in how many of the cases in which ACES would have triggered a full-scope reinvestigation would it have also triggered a second or maybe even a third reinvestigation during that period if the person did not change his/her behavior. It is also unknown how much earlier ACES would have detected issues of major security concern compared to the current approach. However, none of the cases that ACES did not select for full-scope reinvestigations, based upon record reviews covering the five previous years, would have been selected for full-scope reinvestigations had annual or even more frequent checks been run covering that same interval. Therefore, after correcting for random point assignment and access sensitivity, the estimated percentage of cases that would have not been selected for a full-scope PR should be fairly accurate for the time intervals considered.

The ACES scores reflected in the primary analyses took into consideration the results from the subjects' initial investigations. If an issue of security concern was raised during that investigation the subject received one point toward the threshold for receiving a full-scope reinvestigation. The rationale for including that element in ACES is that people with prior issues are more likely to have issues detected in the future. It probably would have been preferable to take into consideration the outcome from all the subjects' prior full-scope investigations, especially the most recent ones, instead of only their first investigations. Subjects with multiple clean reinvestigations, including their most recent clean reinvestigations, are probably less likely to have issues of security concern surface than subjects who do not meet those criteria.

While the OPM data indicate that approximately two thirds of the reinvestigation cases for high-level security clearances and access would not have received a full-scope reinvestigation under ACES, that figure does not represent the likely savings. As previously noted, a small number of the people under ACES would have probably received more than one full-scope reinvestigation during the five-year period. Some of the people who received less than three points in the analyses depicted in Tables 6 and 7 would have required a full-scope reinvestigation due to receiving additional points for access sensitivity and/or random assignment which were not included in the estimates. While the ACES electronic checks are much less expensive than the face-to-face interviews that are included in full-scope investigations, many of those electronic checks are not free and would be done at least once a year. People under the present system who quit between the five-year reinvestigation intervals and receive no follow-up investigation were not included in the two-thirds figure's denominator. It is strongly recommended that before any savings from adoption of ACES are considered for removal from existing budgets that they be fully known and have already been achieved.

## **Conclusion**

Based upon the preliminary analyses conducted in this study, it appears that ACES has the potential to dramatically decrease the number of full-scale PRs that need to be initiated with practically no decrease in the ability to identify cases containing serious issues. Traditional, fixed-interval PRs miss serious issues occurring between investigations whenever people having those issues quit prior to their upcoming PR. Therefore, it is anticipated that for people holding TS/SCI clearances, ACES will detect more serious issue cases, and will detect them sooner and at less cost, than the traditional PR approach. Furthermore, ACES will help close a five-year window of vulnerability in which issues of serious security concern are allowed to escape detection and intervention. Additional research is now underway to further assess the feasibility of ACES and other personnel security continuing evaluation procedures that are based upon similar strategies.

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## **Appendix A**

### **Proposed ACES Criteria for Selecting Cases for Full-Scale Reinvestigations**



## **PROPOSED ACES CRITERIA FOR SELECTING CASES FOR FULL-SCALE REINVESTIGATIONS**

- Was an issue of security concern warranting adjudication consideration (e.g., it was not a case where the alleged misconduct was proven to be unfounded or mistakenly attributed to the subject) identified by that person's last full-scale investigation? If yes, one point is issued.
- Has it been five years or more since that person's last full-scale investigation? If yes, one point is issued.
- Does the person have access to especially sensitive classified information or materials? If yes, one point is issued.
- Has an issue or set of issues of at least minor security concern been detected by the database monitoring since the subject's last full-scale reinvestigation? If yes, one point is issued.
- Has an issue or set of issues of at least moderate security concern been detected by the database monitoring since the subject's last full-scale reinvestigation? If yes, one point is issued in addition to the point issued for having at least minor issues detected.
- Has an issue or set of issues of major security concern been detected by the database monitoring since the subject's last full-scale reinvestigation? If yes, one point is issued in addition to the two points issued for having at least minor and moderate issues detected.
- Was the person assigned an additional point at random at the completion of his/her last full-scale investigation? (The chances of being issued one point is 1 out of 20.) If yes, one point is issued.
- Each affirmative answer receives one point. Three or more points trigger a full-scale reinvestigation. (Range = 0 to 7 points.)